by L. Jay Atkinson and Carl Jones ☆

Farm Income and Gross National Product

Part I—Recent Trends

FARM production has continued at a high rate in 1954. Livestock and livestock products marketings in the first half of the year ran ahead of the corresponding period in 1953 and there were indications of further expansion in livestock production. Crop marketings in the first half of 1954 were about as large as a year earlier. The acreage of crops planted or growing this year is the same as last as approximately 20 million acres taken out of wheat and cotton production were diverted to other crops not under marketing quotas. Prolonged drought brought crop deterioration during July. Prospects in early August were for a somewhat smaller harvest than in 1953.

Domestic demand for farm products has been strong over the war and postwar period. The expansion in output in the past 3 years, however, has exceeded demands and has resulted in larger carryover of stocks. The large supplies have been accompanied by a drop in farm prices from the peak reached in the 1950–51 rise. Support extended by the Commodity Credit Corporation rose to $4 billion for the 1953 crops. During this period export demand declined from the high point reached in 1951. Farm product exports were $4 billion in 1951, $3.4 billion in 1952, and $2.8 billion in 1953. In recent months there has been some pickup in exports, principally cotton.

Processing and marketing costs have increased somewhat during the past 3 years so that consumer prices for food and apparel have eased only slightly.

The general course of farm prices has been downward during this period, though there have been considerable intervals in which they have shown little overall change. In the latter part of 1953 and in the first few months of 1954 farm prices were largely stable. Some further decline in farm prices developed in the second quarter.

Cash farm receipts were 2 percent below a year ago in the first half. As shown in the accompanying chart, gross farm income in 1953 was down about $4 billion or 10 percent from the high reached in the upsurge of 1951 which carried gross income to a peak of $38 billion. As production expenses have remained relatively firm, net farm income also declined about $4 billion from 1951 to 1953, or a shrinkage of nearly one-fourth. In the first half of 1954, net income was down a little from a year earlier.

Support operations

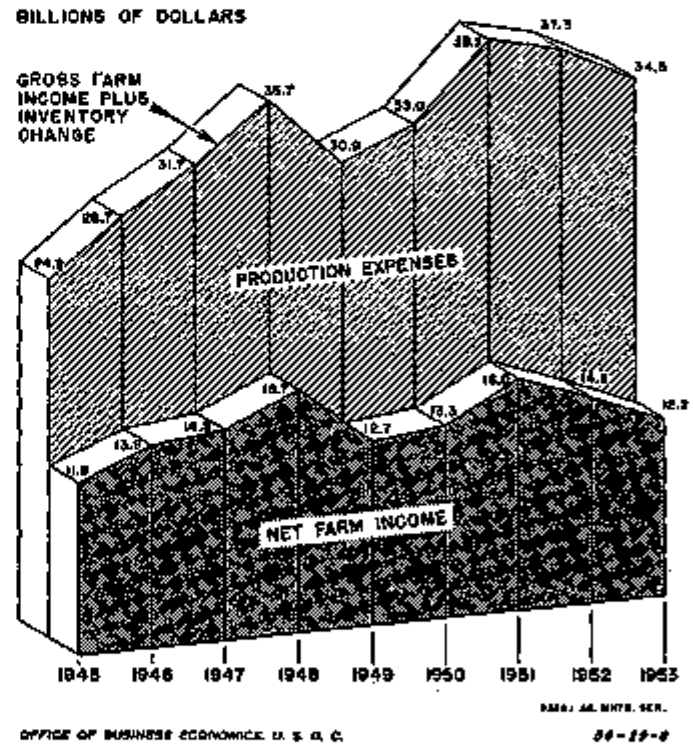
Government loans and purchases for price support purposes on 1954 crops will be down from the high volume of the past year. Of the $4 billion total price support extended on 1953 crops (through May 1954) wheat and cotton each accounted for more than $1 billion. With marketing quotas in effect for the 1954 crop, acreages of each of these crops were reduced about one-fifth from 1953. Wheat yield per acre is estimated to be only a little higher than last year, so that estimated production is down about 15 percent. This decrease is equal to about one-third of the amount put under price support from the 1953 crop.

The 1954 wheat crop exceeds anticipated domestic use and probable exports. Domestic disappearance for the 1954–55 marketing year is estimated by the Department of Agriculture at 660 million bushels. If exports are about the same as in the past year, 215 million bushels, the indicated carry-over July 1, 1955, would be approximately 1 billion bushels, which is slightly larger than at the beginning of the year and about equal to the 1954 crop.

The Secretary of Agriculture has announced a national marketing quota for the 1955 wheat crop which has been approved by the required two-thirds of eligible farmers voting. The acreage allotment is 55 million acres, the minimum permissible under current legislation. This is 7 million acres smaller than the allotment for the 1954 crop.

In view of the general diversion of acreage from wheat to other crops, some of which are in actual or potential surplus supply, new restrictions have been announced for the control

Farm Income Trends



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of diverted acres. Producers will be required to comply with all acreage allotments established for 1955 in order to be eligible for price support on any crop produced. In addition to the cross-compliance provision for allotment crops, farmers who have more than 10 acres to be diverted from allotment crops will be required to stay within a "total acreage allotment." This provision means that a farmer must plant no more in 1955 than in 1953 of nonallotment crops other than hay and related uses. In other words, the reduction in allotment crops must be a net reduction from 1953 acreage for all crops to be harvested except hay. These requirements supersede the looser controls of 1954 under which farmers did reduce acreage of wheat and cotton but planted correspondingly more of other crops for harvest.

Cotton production was estimated on August 9 at 12.7 million bales. This is a reduction of about 3.8 million bales, or over one-half of the total quantity pledged for price support from the 1953 crop, and three-fourths of the net amount pledged. Estimated production is slightly larger than disappearance in the year ended August 1, 1954, but somewhat below estimated requirements for the year ahead.

Corn was the third crop in terms of support activity for the 1953 crop, but support activity needed for the new crop will be much reduced. Though the acreage planted was the same in 1954 as the year before, dry weather in July brought a sharp cut in yield prospects. With a large carryover of corn and abundant production of other feed grains, the feed concentrate supply prospect per animal unit is about average. Some increase in concentrate feeding may be made as a substitute for hay and pasture, both of which suffered from the summer drought.

For most other crops, indicated production in 1954 was higher than in 1953, and many of the storable crops had price support programs. The latter include feed grains other than corn, soybeans, flaxseed, and rice, all of which expanded acreage and prospective production in 1954. In the past year, however, all of these products together constituted less than one-sixth of total price support activity.

Livestock production

Adjustment of farm output is not directly related to demand in the straightforward manner of industrial output, where production schedules have more flexibility and are geared to demand as closely as practicable. Though agricultural programs and price support activities provide some alteration in the price structure and in production alternatives confronting farmers, they have not changed the basic planning of the individual farm entrepreneur. For the larger part of farm output which is not directly subject to controls, the reaction of the individual farmer to the change in demand is (appropriately) judged by the farmer to have no appreciable effect upon the price received for his product.

In addition, there are technical cost considerations which render farm output less flexible than industrial output. In agriculture a much smaller proportion of costs are "prime" costs, directly related to the level of output. Thus, wages and salaries in agriculture constitute about one-sixth of income originating in this sector whereas in manufacturing employee compensation comprises three-fourths of income originating.

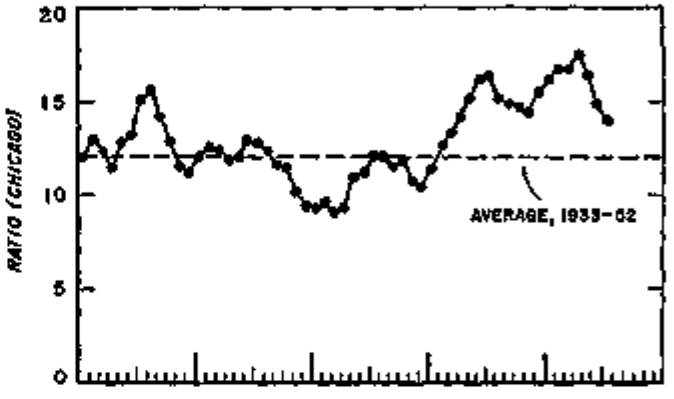
The general nature of the adjustment of livestock production to a levelling off in demand is illustrated by the changes in commitments and actual output in the past 2 years. A number of aspects of livestock operations can be changed at various times during the year, though the time required to change the rate of production or marketings varies from several months in the case of poultry to several years for beef cattle, with intermediate periods required for dairy cattle and hogs.

For livestock and products output as a whole, the upward trend of the past few years is extended into 1954 as the rising segments continue to expand and those previously contracting turn upward. The rise in 1953 was mainly attributable to stepped-up cattle marketing, but dairy production was also expanding. Further increases in marketings of each of these are occurring in 1954.

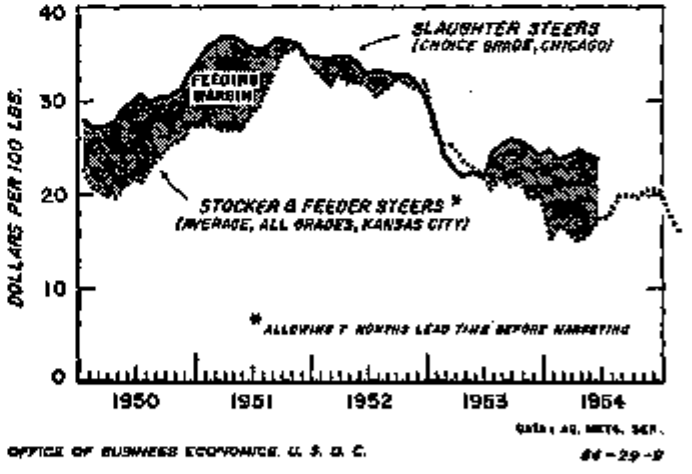
Cattle raising, feeding, and marketing have been subjected to a number of diverse influences in the past 2 years. The rise in cattle numbers is slowing down as cattle producers appear to be making preliminary adjustments leading to a

Livestock Feeding

The hog-corn ratio has been favorable



The margin broadened for steers marketed in late 1953 and early 1954



leveling off or a reduction in herds. There is an increase in cow and calf marketing and the number of steers on farms has been reduced. On the other hand, the number of cattle on feed has been increasing in relation to a year earlier, following a slowing-up in the movement into feed lots in the latter part of 1953. Thus the number of cattle on feed July 1 is estimated to be about 5 percent higher than a year earlier in comparison with a 2 to 3 percent decline on April 1 and a 9 percent drop on January 1 (on a year-to-year basis).

The emergence of a broader demand for feeder cattle in the first half of 1954 has lent strength to the market for cattle from the ranges and improved the distribution of the meat supply during the year. As shown in the accompanying chart, feeding margins for cattle were unfavorable during 1952 and early 1953. Though margins became favorable

during the latter part of 1953, the number of cattle going on feed was down from a year earlier, rising only after the beginning of 1954.

Part of the stepped-up marketing both in 1953 and in 1954 is attributable to drought conditions in the range cattle areas. In the markets adjacent to dry sections, the run of cattle was heavy as pastures deteriorated in mid-summer of 1954. For the first half of 1954, cattle slaughter for the country as a whole was at a record rate, exceeding the corresponding period a year earlier by 10 percent. From 1951 to 1953, cattle slaughter increased about two-fifths. The sustained rise in beef cattle marketings of the past 2 years has been accompanied by a somewhat greater decline in cattle prices and accordingly a declining trend in cash receipts from cattle marketings.

Continuing strong consumer demand for meat, a considerable reduction in pork supplies, and emergency measures to make feed available in drought-stricken areas together with surplus purchases of beef at the peak of the seasonal run have prevented a greater decline in cattle prices. Cattle prices averaged slightly higher during the first 6 months of this year than in the corresponding period of 1953 but had fallen a little below by early summer.

More hogs coming

Hog production was curtailed successively in 1952 and 1953 despite bumper corn crops in each of those years. Normally, large corn crops are followed by expansion in the number of pigs raised, but in each of these years there was an increase in corn placed under loan and a decline in farrowings. The corn-hog ratio became favorable early in 1953 (see accompanying chart) and after a longer than usual lag, pig farrowings turned upward at the year end.

The 1954 spring pig crop was estimated to be 13 percent above a year earlier and about the size of the 1952 crop. As these pigs began to reach market in the summer months, they brought to an end the 2-year decline in hog marketings which had pushed hog prices unusually high. The peak in hog prices was reached in April and they were substantially lower in June and July. For the first half of 1954, cash receipts from hog marketings exceeded the corresponding period a year earlier, continuing the uptrend of the past 2 seasons.

Rising milk flow

Dairy production turned upward during 1952 and has expanded irregularly but strongly since that time. The rise in milk production of 5 percent from 1952 to 1953 was very large for this typically stable item. The uptrend continued through the first quarter of 1954, after which some slackening appeared. The sustained upturn in dairy production in the past 2 years was not prompted by an increase in dairy prices in relation to feed. Milk-feed and butterfat-feed price ratios averaged slightly lower in 1953 than in other recent years and were below the long-term averages. They declined further in 1954 as dairy product prices decreased somewhat more than feed prices.

Three influences contributed to the advance in dairy production. Declining prices for slaughter cattle resulted in reduced culling of dairy stock and an increase in the size of dairy herds. A second influence has been the sustained technological advance of recent years. Better pastures, improved hay and silage, artificial insemination, and labor-saving arrangements for the care of cattle have all contributed to the rise in dairy output. A final influence has been the support price established for manufactured dairy products. Of the four principal groups of livestock and products, this was the only one for which price support was maintained throughout 1953. Also, dairy producers were the only group which "lengthened commitments" during 1953, though prices had advanced for two of the groups—poultry and hogs—and an expansion in their output is occurring in 1954. Beef cattle marketings increased in 1953, but this marked a slowing down in the rate of expansion of cattle herds.

Poultry and egg production in 1954 has been running well ahead of a year earlier and a further rise is expected as a result of a considerable increase in egg hatchings in early 1954 when egg prices were above a year earlier. Egg hatchings tapered off in the second quarter of this year following a drop in egg prices. Cash receipts from the marketing of poultry and eggs were down 10 percent in the first half of 1954 as compared with a year earlier. For the year 1953 as a whole, cash receipts from poultry and eggs reached an all-time high of $3.8 billion as marketings increased only about as much as population from the preceding year and prices advanced.

National output from farms

The extent of long-run changes in farm organization and productivity in relation to total national output may be examined in the framework of gross national product and the portion of the total originating on farms. More and more the output of farms is increased by the use of products purchased by farmers and used in production—intermediate products to use the terminology of the national accounts. The following section presents revised estimates of farm gross national product for the years since 1910 together with a brief analysis of some aspects of changes in agricultural organization and output.

Part II—Farm Gross National Product 1910–53

THE figures on farm gross national product presented in this article revise and extend those which appeared in the September 1951 SURVEY OF CURRENT BUSINESS.

Farm GNP represents the portion of gross national product originating on the farm. It is a value-added concept obtained by subtracting from the total value of farm output the value of (intermediate) materials used up in the production process, such as fertilizer, purchased feed, and motor fuel. It measures production occurring on farms, without duplication and is "gross" only in the sense that depreciation and other capital consumption allowances are not deducted.

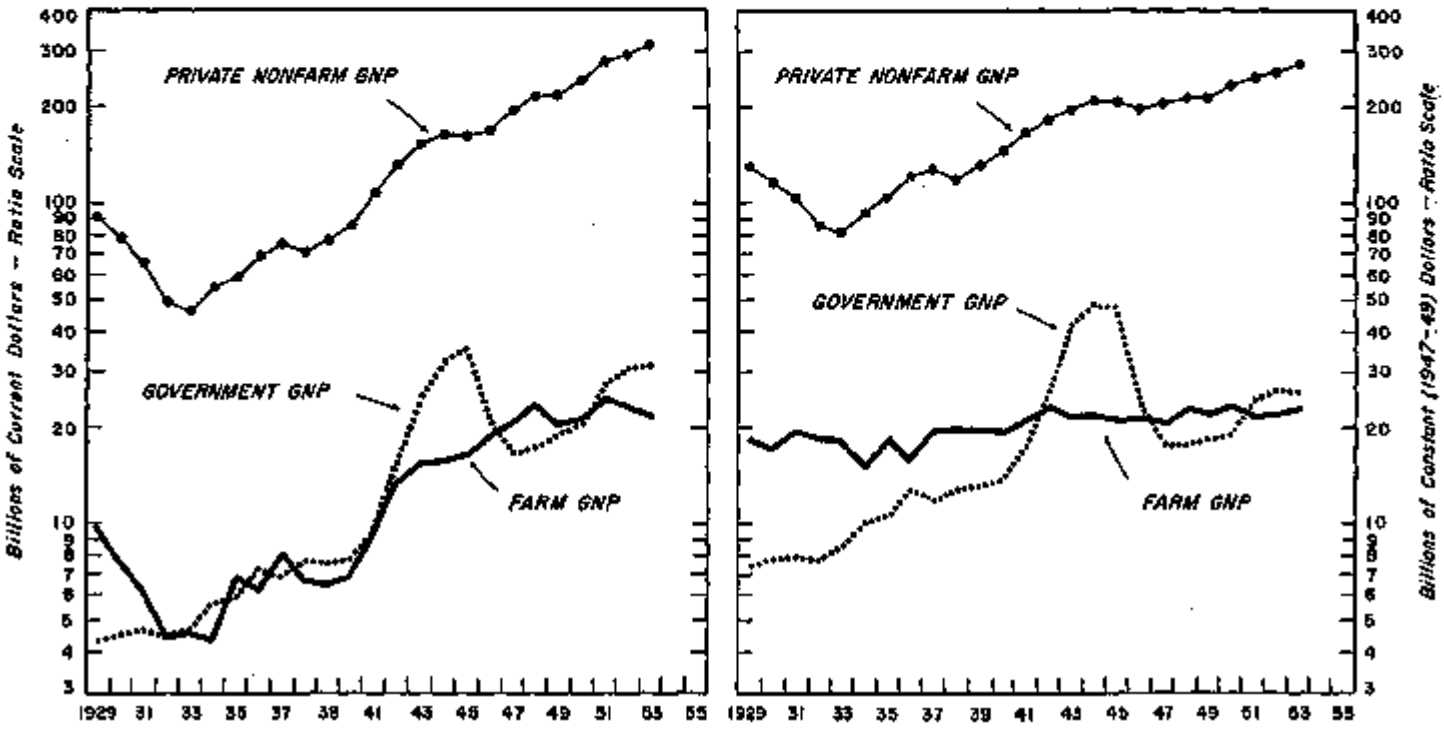
The total value of output includes (1) cash receipts from farm marketings and CCC loans, (2) farm home consumption, (3) net change in inventories, and (4) gross rental value of farm homes. In the real product tables, the sum of the first two of the above categories, i. e. cash receipts plus home consumption, is comparable with the volume of farm marketings and home consumption series of the Department of Agriculture. Though there are differences in the method of calculating the two series compared, they move closely together throughout the whole period 1910–53 with only small divergencies.

If, to the sum of the first two lines, i. e cash receipts and home consumption, is added net change in farm inventories, the result comprises the total commodity output of agriculture and is comparable in concept with the Department of Agriculture series termed "farm output." Movements of these two series are also quite similar throughout the period 1910–53. The underlying series used are principally those of the Department of Agriculture. In the current dollar tables,

Gross National Product by Components

CURRENT DOLLAR trends of farm and nonfarm GNP were roughly similar until recent years when farm GNP has levelled off

CONSTANT DOLLAR farm GNP has risen at about half the rate of private nonfarm GNP



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the derivation of the net farm national product and the reconciliation with farm national income are shown.

Although the current dollar tables incorporate revisions which have been made since 1951 in the underlying data, the present series differs little from the earlier figures.

Farm gross national product and nonfarm private gross national product, measured in current dollars, each rose about 140 percent from 1929 to 1948. Subsequently Farm GNP in current dollars was off in 1949, advanced in 1950 and 1951 to a peak of $24.6 billion in the latter year, and has since declined, with 1953 nearly 10 percent below 1948. On the other hand nonfarm private GNP continued upward after 1949; by 1953 it was more than one-third higher than in 1948. Much of the movement in current dollar GNP reflected price changes, as is brought out in the following section.

Real Farm GNP rising

The base of the constant dollar gross farm product estimates has been shifted from 1939 to a 1947–49 average. Though there is some advantage in using a single-year base, as has been done for the total gross national product constant dollar estimates which are based on the year 1947, the farm price structure was sufficiently distorted in 1947 to make the use of a longer base period essential.

The constant dollar estimates of farm GNP, calculated in terms of 1947–49 prices, rose over two-fifths between 1910 and 1953, or at an average rate about half that of nonfarm private GNP. As shown in the accompanying chart farm GNP has fluctuated considerably, both annually and for periods of a few years, mainly as a result of weather conditions.

The relationship between fluctuations in price and quantity series is not so clear-cut as in the case of nonfarm GNP. In part this is due to weather influences, but part is attributable to the uncertainty of the response of agricultural production to changed demand conditions. For the farmer, there is no broad incentive to alter substantially the scale of output upon a turn in the general demand situation. Practicable changes in output require considerable time, so that temporary changes in demand cannot be readily exploited.

A second influence tends to limit the response of real farm GNP to changes in demand. When the demand situation improves, farmers in order to secure increased output tend to step up purchases of nonfarm supplies and equipment more than of products originating on the farm, partly replacing labor which in war and postwar years has been less abundant. In general the reason is that they are substituting products which have risen less in price (or more in efficiency) for those which have risen more and perhaps become less readily available for use in farm production. These substitutions often bring a rise in output with a smaller labor input. As most of them result in increased purchases from the nonfarm sector, only part of the increase in output comes from the value-added on the farm since the cost of intermediate products consumed is deducted from total output to obtain farm GNP.

Farm GNP in 1947–49 dollars has risen at an average rate of 0.9 percent per year. This differs from the earlier calculation in 1939 dollars, chiefly as a result of two influences. The rise in prices of commodities used in production, i. e. intermediate products consumed, between 1939 and 1947–49 was smaller than that of products produced and sold by farmers. Furthermore, the production items which went up less in price between 1939 and 1947–49, such as fertilizer

and lime and motor vehicle operating expenses, tended to be substituted for those whose prices rose more rapidly as a part of the general process of achieving more efficient organization of farm resources.

Productivity higher

Though the increase in real farm GNP has been less rapid than that of private nonfarm GNP, it has been achieved with a sharply shrinking percentage of the private labor force, with the result that the increase in farm GNP per farm worker has been more rapid than the increase in private nonfarm GNP per worker. For the entire period 1910 to 1953, farm GNP per worker rose an average of about 2 percent per year. The rise was accelerated in the latter part of the period as mechanization reduced farm labor requirements, and nonfarm job opportunities attracted workers to urban areas. For the period 1929 to 1953 the increase in farm GNP per worker averaged 2½ percent per year, with some decline in the years through 1936 when weather conditions were especially adverse, followed by a very rapid rise in subsequent years. Nonfarm private GNP per worker has risen an average of about 1½ percent per worker since 1929.

Table 1.—Farm Gross National

[Millions of dollars]

Line	Item	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
1	**Total value of farm output**	7,543	6,737	8,041	7,491	8,008	8,237	9,024	14,201	16,646	17,140	16,417	9,852	10,706	11,901	12,032	13,795	13,142
2	Cash receipts from farm marketings and CCC loans	5,764	5,588	6,007	6,240	6,030	6,396	7,737	10,740	13,467	14,670	12,604	8,116	8,564	9,540	10,202	11,021	10,650
3	Farm products consumed directly in farm households	1,153	1,097	1,148	1,157	1,167	1,130	1,318	1,666	2,157	2,298	2,410	1,671	1,559	1,626	1,628	1,784	1,539
4	Net change in all farm inventories	194	−338	480	−320	376	271	−400	1,258	−190	−541	507	−606	−172	−60	−575	109	−43
5	Gross rental value of farm homes	392	393	404	420	427	434	473	540	615	713	804	700	734	793	780	791	803
6	Less: Value of intermediate products consumed, total	1,610	1,587	1,748	1,797	1,842	1,865	2,288	3,119	3,900	4,221	4,072	2,705	2,838	3,118	3,556	3,476	3,543
7	Intermediate products consumed, other than rents	1,122	1,063	1,208	1,251	1,277	1,236	1,457	1,991	2,848	2,980	3,700	2,004	2,065	2,271	2,638	2,608	2,711
8	Gross rents paid to nonfarm landlords (excluding operating expenses)	404	514	540	546	565	620	781	1,119	1,153	1,241	382	701	773	847	928	877	831
9	Plus: Other items	−11	−12	−14	−15	−17	−18	−20	−21	−23	−26	−31	−38	−41	−42	−41	−38	−37
10	**Equals: Farm gross national product**	5,916	5,138	6,279	5,679	6,149	6,354	6,736	11,070	12,024	12,893	12,314	7,109	7,826	8,741	8,435	10,183	9,576
11	Less: Capital consumption allowances	651	667	690	702	718	745	816	954	1,151	1,427	1,672	1,346	1,218	1,183	1,169	1,159	1,164
12	Depreciation charges	617	632	656	668	683	709	776	907	1,088	1,357	1,595	1,298	1,164	1,120	1,111	1,098	1,103
13	Capital outlays charged to current expense	34	35	35	34	35	36	40	47	63	70	77	48	54	63	58	61	61
14	Equals: Farm net national product	5,265	4,401	5,589	4,977	5,431	5,609	5,920	10,116	10,873	11,456	10,642	5,764	6,608	7,559	7,266	9,024	8,406
15	Less: Indirect business taxes	150	167	174	200	203	221	237	268	289	359	438	456	460	470	497	472	490
16	Plus: Government payments to farm landlords	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	**Equals: Farm national income**	5,115	4,234	5,415	4,777	5,228	5,388	5,683	9,848	10,584	11,097	10,204	5,308	6,148	7,089	6,769	8,552	7,916

Source: U. S. Department of Commerce, Office of Business Economics, based largely upon data from U. S. Department of Agriculture.

Table 2.—Implicit Price Deflators for Farm Gross

[1947-49=100]

Line	Item	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
1	**Total value of farm output**	37.9	34.9	36.8	37.4	38.1	35.6	42.4	64.8	74.2	77.5	76.1	40.5	48.1	51.3	52.6	57.8	53.1
2	Cash receipts from farm marketings and CCC loans	37.0	34.3	34.6	37.1	37.5	36.3	43.8	65.6	75.4	78.6	77.0	48.4	47.2	50.4	51.0	56.9	53.0
3	Farm products consumed directly in farm households	38.7	36.5	38.8	39.0	39.0	37.7	44.7	62.5	71.3	77.4	80.5	53.5	52.2	55.4	54.4	59.7	60.6
4	Net change in all farm inventories	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
5	Gross rental value of farm homes	30.1	30.4	34.9	37.0	37.3	37.1	38.5	44.0	49.4	50.1	59.8	59.5	58.0	61.3	61.6	62.3	63.2
6	Less: Value of intermediate products consumed, total	40.0	39.0	41.6	41.9	42.6	43.1	49.1	69.4	78.1	85.2	85.9	50.7	53.1	59.5	60.4	63.2	63.0
7	Intermediate products consumed, other than rents	41.8	42.0	44.2	44.0	46.7	47.1	51.0	69.1	77.1	83.8	88.1	54.5	56.1	60.1	60.9	63.1	61.8
8	Gross rents paid to nonfarm landlords (excluding operating expenses)	39.1	35.2	30.7	35.3	34.0	30.8	44.6	71.8	84.3	88.8	83.1	42.3	48.6	57.9	50.8	60.5	48.9
9	Plus: Other items	37.1	33.0	35.6	36.2	36.9	33.9	40.6	63.3	72.7	75.3	73.3	45.1	46.5	49.5	56.4	56.1	54.0
10	**Equals: Farm gross national product**	37.1	33.6	36.6	36.2	36.9	33.9	40.6	63.3	72.7	76.1	73.3	45.1	46.6	49.5	56.0	56.1	54.6

Source: U. S. Department of Commerce, Office of Business Economics, based largely upon data from U. S. Department of Agriculture.

Table 3.—Farm Gross National

[Millions of 1947-49 dollars]

Line	Item	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
1	**Total value of farm output**	19,919	16,417	21,889	20,041	21,665	23,151	21,268	22,401	21,435	22,108	21,578	21,189	22,283	22,556	22,856	21,959	23,885	25,231
2	Cash receipts from farm marketings and CCC loans	15,304	10,280	10,470	16,842	16,117	17,642	17,040	16,378	17,866	18,249	16,370	17,052	18,161	18,939	19,103	19,360	19,011	20,481
3	Farm products consumed directly in farm households	3,006	3,087	2,052	2,068	2,090	3,017	2,930	2,863	3,026	3,089	2,902	2,957	2,060	2,857	2,955	2,990	3,084	2,081
4	Net change in all farm inventories	440	−1,658	1,351	−887	764	1,323	−613	1,412	−498	−610	683	−916	−109	−142	−1,304	331	−330	48
5	Gross rental value of farm homes	1,069	1,079	1,096	1,116	1,144	1,169	1,190	1,228	1,252	1,270	1,281	1,277	1,200	1,264	1,287	1,260	1,270	1,278
6	Less: Value of intermediate products consumed, total	3,947	3,998	4,205	4,292	4,307	4,331	4,919	4,481	5,058	4,967	4,742	5,739	5,341	5,242	5,890	5,746	6,103	6,323
7	Intermediate products consumed, other than rents	2,085	2,578	2,734	2,788	2,730	2,623	3,866	2,924	3,090	3,569	3,705	3,680	3,750	3,778	4,317	4,273	4,404	4,412
8	Gross rents paid to nonfarm landlords (excluding operating expenses)	1,202	1,420	1,471	1,504	1,571	1,708	1,753	1,558	1,368	1,398	1,037	1,659	1,590	1,464	1,573	1,473	1,699	1,911
9	Plus: Other items	−30	−36	−39	−41	−46	−53	−49	−33	−32	−35	−42	−84	−65	−85	−82	−68	−69	−74
10	**Equals: Farm gross national product**	15,942	16,383	17,625	15,708	16,652	16,767	16,898	17,487	16,545	17,106	16,792	15,757	16,834	17,088	16,884	16,146	17,713	18,834

Source: U. S. Department of Commerce, Office of Business Economics, based largely upon data from U. S. Department of Agriculture.

Part of the revision in the trend of farm GNP per worker is attributable to the change in total farm GNP in constant dollars which resulted from the shift in base periods. A somewhat larger part reflects a revision in the trend in the agricultural employment series, which now shows a more rapid decline than the old series. The index "man-hours used for farm work" of the Department of Agriculture has also been revised in the same general direction. The use of the Bureau of the Census series on farm employment, which is somewhat different in concept and is available for a shorter period results in the same general trend in farm GNP per worker as that described above. The Census series indicates, and the Department of Agriculture series on manhours implies, a gradual decline in hours worked per week on the farm in the past 15 years so that farm GNP has increased somewhat more rapidly per manhour than per worker.

Labor-saving investment

The sustained rise in farm GNP per worker results from a combination of influences which has brought farreaching changes in farm organization and management. In the broadest terms, capital expenditures have been substituted

Product in Current Dollars

[Millions of dollars]

1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Line
13,046	13,585	13,676	11,120	8,702	6,434	6,660	6,699	9,646	9,247	11,372	9,684	9,719	10,456	13,615	19,101	22,049	23,892	24,119	27,946	31,318	35,399	30,703	32,704	38,062	36,984	34,380	1
10,733	10,988	11,290	9,059	6,389	4,736	5,303	6,314	7,074	8,356	8,810	7,703	7,819	8,332	11,078	15,480	19,358	20,377	21,383	24,584	29,706	30,207	27,944	28,328	32,709	32,480	31,207	2
1,008	1,600	1,704	1,549	1,265	1,010	1,024	1,090	1,317	1,372	1,394	1,208	1,224	1,238	1,442	1,772	2,140	2,169	2,218	2,523	2,808	2,035	2,180	2,607	2,249	2,145	2,087	3
−185	117	−107	−300	324	34	−259	−1,390	500	−1,112	623	103	58	270	482	1,169	−170	−415	−482	−249	−2,389	1,136	−876	923	1,404	654	−675	4
800	811	829	899	754	656	597	815	621	620	694	622	620	626	646	684	727	791	960	1,103	1,316	1,421	1,446	1,448	1,618	1,716	1,751	5
3,659	3,942	3,824	3,323	2,429	1,913	2,032	2,326	2,806	2,971	3,205	2,930	3,209	3,021	4,273	6,747	6,813	7,272	7,913	9,207	10,884	11,067	10,647	11,603	13,461	13,043	12,503	6
2,704	3,026	2,912	2,583	1,924	1,532	1,604	1,821	2,209	2,302	2,618	2,357	2,608	3,013	3,385	4,606	5,541	6,064	6,583	7,629	9,060	9,900	9,013	10,001	11,690	11,832	10,824	7
936	917	912	740	505	381	428	504	598	669	647	572	608	608	888	1,162	1,272	1,201	1,330	1,678	1,834	1,787	1,634	1,602	1,771	1,821	1,769	8
−37	−37	−29	−44	−81	−73	−40	−43	−9	−3	−18	−29	−15	−2	21	34	32	38	24	43	38	29	−9	44	−29	−48	−68	9
9,387	9,606	9,817	7,733	6,193	4,448	4,588	4,331	6,944	6,283	8,089	6,726	6,496	6,843	9,363	13,388	16,228	16,668	16,220	18,782	20,554	23,738	20,147	21,167	24,888	23,893	21,859	10
1,167	1,175	1,209	1,170	998	846	760	784	827	883	974	996	1,026	1,025	1,170	1,388	1,565	1,750	1,869	2,010	2,444	3,011	3,470	3,022	4,323	4,662	4,794	11
1,107	1,113	1,148	1,109	944	799	719	741	781	835	925	945	975	976	1,124	1,322	1,484	1,667	1,772	1,907	2,332	2,888	3,347	3,797	4,185	4,517	4,649	12
60	62	61	61	54	47	42	43	46	48	49	51	50	49	55	66	81	83	97	103	112	123	120	125	138	145	145	13
8,208	8,431	8,608	6,563	5,194	3,602	3,828	3,547	6,117	5,380	7,115	5,730	5,473	5,818	8,194	12,000	13,723	13,008	14,361	16,772	18,110	20,727	16,671	17,225	20,206	18,041	16,865	14
304	315	323	316	467	403	301	341	347	356	360	366	373	372	387	415	422	443	404	533	610	664	716	801	970	928	951	15
0	0	0	0	0	0	113	397	493	242	283	377	661	627	472	483	543	687	659	698	277	227	161	249	252	242	188	16
7,896	7,916	8,063	6,044	4,727	3,199	3,694	3,603	6,263	5,296	7,620	5,741	5,761	6,073	8,260	12,148	13,894	14,162	14,826	16,937	17,777	20,280	16,117	16,673	18,645	17,965	16,102	17

National Product by Major Components

[1947-49=100]

1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Line
51.7	58.1	55.4	47.6	31.8	25.9	27.6	32.7	40.4	42.2	44.2	38.7	35.8	38.2	48.1	68.6	70.4	72.7	76.9	84.3	96.9	104.4	92.4	94.2	116.7	108.0	96.4	1
51.3	54.4	54.3	40.1	32.4	24.2	26.9	32.2	40.1	42.0	44.8	35.8	36.0	37.2	46.0	68.7	70.0	71.6	70.0	85.4	101.0	100.8	91.4	94.3	110.8	108.0	90.1	2
57.0	58.8	60.3	53.9	41.7	32.3	34.2	35.0	44.5	46.6	46.0	41.2	39.1	40.9	50.5	63.3	70.0	78.6	82.0	89.9	102.5	100.0	92.2	97.8	102.7	102.9	98.0	3
																											4
62.8	63.4	64.6	64.0	50.4	42.7	48.2	41.1	52.1	62.3	53.7	62.2	61.5	61.4	62.8	66.7	61.2	68.0	78.7	84.1	97.2	102.0	101.1	101.1	108.3	112.6	113.6	5
67.0	63.3	61.2	53.7	40.8	33.5	35.1	44.9	40.1	48.1	54.8	45.0	44.4	40.3	50.2	64.0	69.0	74.4	75.6	84.1	98.1	106.1	95.8	99.7	111.0	108.7	100.7	6
61.3	68.0	66.0	58.6	47.6	38.1	39.4	47.7	52.8	63.1	57.8	50.9	40.0	40.8	53.3	62.1	70.0	74.1	70.0	83.4	98.6	100.3	97.1	100.4	111.0	105.6	101.4	7
48.9	52.3	50.4	40.1	26.4	18.4	25.0	37.0	40.7	41.1	45.8	32.0	31.4	34.2	41.4	55.3	66.8	71.2	73.0	87.4	106.1	106.8	88.0	95.7	110.5	108.4	96.6	8
49.7	53.9	53.4	46.3	31.7	23.5	26.1	28.6	37.9	39.5	41.1	33.5	32.7	35.0	44.5	67.8	70.0	71.9	77.7	87.4	100.9	103.0	90.7	91.4	112.1	106.1	94.2	9
49.7	53.9	53.4	46.3	31.7	23.8	26.1	28.6	37.9	39.5	41.1	33.6	32.7	36.0	44.6	67.8	70.6	71.9	77.7	87.4	100.9	104.6	90.7	91.4	112.1	106.1	94.2	10

Products in Constant Dollars

[Millions of 1947-49 dollars]

1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Line
24,230	24,690	22,394	25,738	24,843	24,196	20,460	21,628	21,904	25,992	26,445	27,172	27,360	29,600	32,694	31,327	31,600	31,346	32,380	31,433	33,960	33,227	34,722	34,064	34,990	35,597	1
20,180	20,820	19,830	19,038	18,587	20,456	19,071	17,827	19,906	19,676	21,634	22,303	22,415	24,270	30,339	27,308	28,384	28,143	28,416	29,104	29,643	30,681	30,055	29,094	30,097	33,833	2
2,840	2,874	2,867	3,018	3,128	3,282	3,010	2,937	2,962	2,902	3,070	3,135	3,037	2,856	2,793	2,782	2,768	2,076	2,850	2,600	2,406	2,375	2,387	2,153	2,102	2,065	3
−84	−287	−384	1,818	911	−759	−3,416	1,670	−2,138	1,809	653	473	699	1,156	2,314	48	−753	−765	−170	−1,676	1,474	−1,157	949	815	383	−534	4
1,278	1,283	1,288	1,200	1,242	1,217	1,204	1,192	1,165	1,186	1,181	1,203	1,216	1,224	1,208	1,180	1,184	1,298	1,311	1,353	1,303	1,428	1,431	1,463	1,624	1,543	5
6,338	6,240	6,167	6,963	6,881	6,703	5,181	5,290	6,040	6,054	6,443	7,227	7,326	8,509	9,486	9,740	9,770	10,450	10,953	11,100	11,014	11,013	11,640	12,124	12,002	12,597	6
4,585	4,440	4,342	4,041	3,010	4,044	3,830	3,840	4,420	4,630	4,653	6,323	6,047	6,303	7,402	7,812	7,066	8,464	9,031	9,372	9,317	9,232	9,966	10,521	11,191	10,675	7
1,759	1,809	1,849	1,911	1,062	1,749	1,304	1,446	1,629	1,438	1,790	1,904	1,779	2,140	2,063	1,934	1,613	1,892	1,922	1,728	1,697	1,781	1,674	1,608	1,711	1,833	8
−69	−54	−141	−258	−307	−159	−150	−21	−8	−44	−80	−40	−6	47	69	74	63	31	49	30	26	−10	49	−20	−15	−73	9
17,829	18,387	17,054	18,630	15,655	18,244	15,129	16,319	15,647	19,664	19,910	19,850	19,634	21,043	23,178	21,656	21,774	20,891	21,485	20,378	23,917	22,204	23,130	21,940	21,959	23,008	10

for labor on a relatively stable cropland acreage. During the prosperous war years this process was rapid despite limitations on production of farm machinery and equipment and it was accelerated after the war was ended. Capital was readily available either out of earnings or on favorable terms from credit agencies and the price of farm equipment and supplies rose less rapidly than either prices received by farmers or farm wage rates. Furthermore, there were rapid improvements in the efficiency of farm equipment. These influences hastened the mechanization of farm operations and provided a favorable climate for the adoption and widespread dissemination of a series of technological advances. A considerable number of small-scale farms on which output per worker was low disappeared, many of them being consolidated into larger units.

Table 4.—Prices and Volume of Selected Items of Farm Costs
(1910–100)

Items of cost	1910	1920	1940	1950	1953
Feed purchased					
Price	98	190	100	210	227
Volume [1]	44	68	100	102	104
Fertilizer and lime purchased					
Price	100	133	100	147	158
Volume [1]	67	85	100	246	282
Livestock purchased					
Price	65	120	100	287	307
Volume [1]	37	91	100	135	138
Operation of motor vehicles					
Price	107	124	100	149	157
Volume [1]	1	70	100	223	256
Cost of hired labor					
Wage rates	73	143	100	320	385
Number employed	128	127	100	78	72

[1] Implicit volume estimates derived from movement of prices and production expenses.

Source: U. S. Department of Agriculture, Agricultural Marketing Service.

Something of the incentive for, as well as the scale of, the shift in farm organization is suggested in the accompanying table showing relative changes in prices and in volume of a few principal farm inputs. Among the most important incentives for farm mechanization was the sustained rise in farm wage rates. By 1953 farm wage rates were about 4 times as high as in 1940, the rise reflecting a long period of full employment during which better-paying jobs were available off the farm. The number of hired farm workers declined more than one-fourth during this period.

Both the initial cost of tractors and motor trucks and the costs of operation rose less rapidly than wage rates from the prewar period. The number of tractors on farms doubled between 1940 and 1948 and trebled by 1953. Motor trucks expanded somewhat less rapidly. As mechanization proceeded, farm work animals declined to a relatively insignificant role in commercial farm operation.

Among the list of improved practices lowering farm costs and increasing production, the increased use of fertilizer illustrates the nature of the changes in farm organization. As shown in table 4, fertilizer prices rose about 60 percent between 1940 and 1953 whereas fertilizer consumption rose three-fold during this period. A considerable part of the explanation of the rise in fertilizer use is that it became sufficiently cheap in relation to prices of products raised by farmers to make increased application profitable on a wide range of crops and in areas where it had previously been little used. Since feed prices rose much more than fertilizer, there has been a tendency in recent years for dairy farmers who used large amounts of feed to purchase less feed and more fertilizer to grow a larger portion of feed required. Thus, the rise in feed purchased by dairy farmers has been moderate in recent years in view of the rise in milk production and the favorable milk-feed price ratio during most of the postwar period.

The use of fertilizer was also encouraged by improved varieties, better cultivation, and wider use of soil improvement practices. Hybrid corn gives more response to fertilizer application than the older open-pollenated varieties, and because of the higher drain of soil nutrients associated with greater yields, increased fertilizer application is required to maintain fertility. Better control of insects, diseases, and weeds, and in some instances supplemental irrigation tend to make fertilizer more effective and more profitable.

Thus, there is a clear tendency for one improved practice or cost-cutting technique to beget another in a manner that is comparable to—though less highly developed than—the systematic introduction of cost-cutting techniques into mass-production industries.

The rise in productivity of agriculture has kept pace with demands of an expanding population with recurrent periods of surplus accumulation. In the postwar years, some accumulation developed in 1948–49 and a larger rise has occurred in the past 2 years. Though the direct relationship is between total supply of farm products and demand, the rise in productivity is closely related. The link between the two is that a rapid rise in productivity suggests the need for a concomitant though not necessarily equivalent reduction in resources in agriculture in keeping with the more moderate rise in demand for farm products. The reduction in labor employed in agriculture has been substantial, as discussed earlier, but the acreage of farm land used has varied within a narrow range of 5 percent between the lowest and the highest acreage used since the end of World War I.

The historical gradual deterioration of agricultural land was considerably slowed during the past 20 years and for the country as a whole may have been reversed. Though there is still deterioration of large areas in the United States—wind and water erosion and depletion of fertility and other soil characteristics—much of the more productive land has been "built up" to a higher level of productivity through a series of soil and water conservation practices, crop rotations, and soil amendments.

Table 5.—Motor Trucks and Selected Items of Farm Machinery on Farms

Year	Motor trucks	Tractors	Grain combines	Corn pickers	Farms with milking machines
	(thousands of machines)				(thousands of farms)
1910	0	1	1		13
1920	139	246	4	10	50
1930	900	920	61	50	104
1940	1,647	1,545	190	110	175
1950	2,207	3,039	714	450	630
1953	2,440	4,400	918	615	735

Sources: U. S. Department of Agriculture, Agricultural Research Service; U. S. Department of Commerce, Bureau of the Census.

Finally instead of following the pattern of using up the best land early and resorting to progressively poorer land, the reverse of this has been the case during the past two or three decades. Several million acres of cropland have been retired during this period but in the main it was basically poor land in the first place, though neglect brought deterioration and contributed to its retirement. On the other hand, a roughly equivalent acreage was brought into cultivation by drainage and irrigation during this period. The new land, together with the attendant water or drainage canals, is highly productive and has added significantly to the productive capacity of United States agriculture.

In the period since 1940 relatively favorable prices for agricultural products have had the effect of increasing the rate of irrigation and drainage reclamation.